

PATENT COOPERATION TREATY

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From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
BRADFORD G. ADDISON
BARNES & THORNBURG
11 SOUTH MERIDIAN STREET
INDIANAPOLIS, INDIANA 46204

FOR Response

BY he

DATE 11/17/03

CHECKED BY _____

DATE _____

PCT

WRITTEN OPINION

(PCT Rule 66)

Date of Mailing
(day/month/year)

12 NOV 2003

Applicant's or agent's file reference

29920-72224

REPLY DUE

within 2 months/days from
the above date of mailing

International application No.

PCT/US03/00072

International filing date (day/month/year)

02 January 2003 (02.01.2003)

Priority date (day/month/year)

03 January 2002 (03.01.2002)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): H01J 49/16 and US Cl.: 250/281, 282, 286, 287, 288, 291, 292, 294

Applicant

ADVANCED RESEARCH AND TECHNOLOGY INSTITUTE, INC.

1. This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2 (a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. ~~The applicant may, before the expiration of that time limit, request this Authority to grant an extension. See rule 66.2(d).~~

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 03 May 2004 (03.05.2004)

Name and mailing address of the IPEA/US

Mail Stop PCT, Attn: IPEA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

DAVID VANORE

Telephone No. (703) 308-0956

David Vanore

Form PCT/IPEA/408 (cover sheet)(July 1998)

HB 11/17

I. Basis of the opinion

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
 pages 1-21 _____, as originally filed
 pages NONE _____, filed with the demand
 pages NONE _____, filed with the letter of _____
- ☒ the claims:
 pages 22-25 _____, as originally filed
 pages NONE _____, as amended (together with any statement) under Article 19
 pages NONE _____, filed with the demand
 pages NONE _____, filed with the letter of _____
- ☒ the drawings:
 pages 1-9 _____, as originally filed
 pages NONE _____, filed with the demand
 pages NONE _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages NONE _____, as originally filed
 pages NONE _____, filed with the demand
 pages NONE _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☒ the description, pages NONE _____
- ☒ the claims, Nos. NONE _____
- ☒ the drawings, sheets/fig NONE _____

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."

WRITTEN OPINION

International application No.
PCT/US03/00072

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims <u>3-15, 17-29, 31-37</u>	YES
	Claims <u>1, 2, 16, 30</u>	NO
Inventive Step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-37</u>	NO
Industrial Applicability (IA)	Claims <u>1-37</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Claims 1, 2, 16, and 30 lack novelty under PCT Article 33(2) as being anticipated by Syage et al. (US 6,326,615). Syage teaches a method and apparatus for analysis of an analyte in a time of flight mass spectrometer where two separate ion sources produce two separate streams of ions, both of which are coupled in the time of flight mass spectrometer (Fig. 4).

Claims 3-15, 17-29, and 31-37 lack an inventive step under PCT Article 33(3) as being obvious over Syage. Claims 3-15, 17-29, and 31-37 recite the invention of Syage with different means of producing ions. It would be obvious to one of ordinary skill in the art to select any viable means of producing ions. Syage does not specify that one type of ion source or another is required, but merely that a means to produce ions is required.

Claims 1-37 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

ANY RESPONSE MAY BE FAXED TO:
OFFICE OF THE SPECIAL PROGRAMS EXAMINER
TECHNOLOGY CENTER 2800
(703) 305-0843

----- NEW CITATIONS -----
NONE

WRITTEN OPINION

International application No.
PCT/US03/000

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

TIME LIMIT:

The time limit set for response to a Written Opinion may not be extended. 37 CFR 1.484(d). Any response received after the expiration of the time limit set in the Written Opinion will not be considered in preparing the International Preliminary Examination Report.

BARNES & THOMSON

10/500685
DT15 PCT/PTO 02 JUL 2004

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PCT INTERNATIONAL PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

International Filing Date: 02 January 2003 (02.01.03)

Earliest Priority Date: 03 January 2002 (03.01.02)

International Serial No.: PCT/US03/00072

Invention: Simultaneous Acquisition Of
Chemical Information

Applicant: Advanced Research and
Technology Institute, Inc.

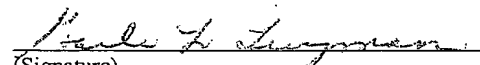
Attorney Docket: 29920-72224

Certificate Under 37 CFR 1.10

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Date of Deposit: December 30, 2003

I hereby certify that this correspondence is being deposited with the United States Postal Service's "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date above and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.


(Signature)

Garla L. Twyman
(Typed or Printed Name of Person Mailing Paper or Fee)

RESPONSE TO WRITTEN OPINION

Mail Stop PCT
Attention: IPEA/US
Commissioner of Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

In response to the Written Opinion mailed 12 November 2003 (12.11.03), agent for applicants respectfully requests consideration of the following remarks.

REMARKS

Objection to Claims 1, 2, 16, and 30 as being anticipated by Syage et al. (US 6,326,615)

Discussion of Claim 1

The Examiner has objected to claim 1 for being anticipated by Syage. It is axiomatic that in order for a reference to anticipate a claim the relied upon reference must teach each and every element of the claim. Claim 1 reads as follows:

1. A method of acquiring chemical information with a mass spectrometer having (i) a first ionization source for creating ions, (ii) a second ionization source for creating ions, (iii) a first detector for detecting ions, and (iv) a second detector for detecting ions, comprising:

(a) simultaneously sampling ions created by said first ionization source and said second ionization source so as to produce a first ion sample and a second ion sample; and

(b) simultaneously detecting ions from said first ion sample with said first detector and ions from said second ion sample with said second ion detector.

Accordingly, the Examiner will appreciate that in order for claim 1 to be anticipated Syage must teach each and every element of the subject claim. Applicants respectfully point out that Syage does not teach each and every element of claim 1. For example, claim 1 recites “**simultaneously** sampling ions created by said first ionization source and said second ionization source so as to produce a first ion sample and a second ion sample” and “**simultaneously** detecting ions from said first ion sample with said first detector and ions from said second ion sample with said second ion detector.” Syage is devoid of any discussion regarding simultaneously sampling ions created by a first ionization source and a second ionization source so as to produce a first ion sample and a second ion sample. In addition, Syage is devoid of any discussion regarding simultaneously detecting ions from a first ion sample with a first detector and ions from a second ion sample with a second ion detector. Accordingly, Syage does not teach each and every element of claim 1 and can not be properly relied upon to anticipate the same. As such, Applicants respectfully request that the subject objection be withdrawn.

If after considering the above discussion the Examiner maintains the subject objection, the Applicants respectfully request that the Examiner point out with particularity (e.g. by column and line number) where Syage teaches each and every element of claim 1, including where in Syage does it teach (i) simultaneously sampling ions created by a first ionization source and a second ionization source so as to produce a first ion sample and a second ion sample and (ii) simultaneously detecting ions from a first ion sample with a first detector and ions from a second ion sample with a second ion detector.

Furthermore, the Applicants acknowledge that the Examiner has made a reference to Fig. 4 of Syage in this objection, but this figure does not teach the above discussed elements. If the Examiner still maintains that Fig. 4 of Syage teaches these

elements, the Applicants respectfully request that the Examiner explain in detail how Fig. 4 teaches (i) simultaneously sampling ions created by a first ionization source and a second ionization source so as to produce a first ion sample and a second ion sample and (ii) simultaneously detecting ions from a first ion sample with a first detector and ions from a second ion sample with a second ion detector.

Discussion of Claim 2

Claim 2 reads as follows:

2. A spectrometer including apparatus for coupling at least two different ion streams simultaneously to the spectrometer from at least two different ion sources.

In light of the above, the Examiner will appreciate that claim 2 recites that the claimed spectrometer includes an apparatus for coupling at least two different ion streams simultaneously to the spectrometer from at least two different ion sources. Applicants respectfully point out that Syage does not teach an apparatus for coupling at least two different ion streams simultaneously to the spectrometer from at least two different ion sources. Therefore, Syage does not teach each and every element of claim 2 and can not be properly relied upon to anticipate this claim. Thus Applicants respectfully request that the subject objection be withdrawn.

Once again, if after considering the above discussion the Examiner maintains the subject objection, the Applicants respectfully request that the Examiner point out with particularity (e.g. by column and line number) where in Syage does it teach a spectrometer that includes an apparatus for coupling at least two different ion streams simultaneously to the spectrometer from at least two different ion sources. In addition, the Applicants respectfully request the Examiner to explain how Fig. 4 teaches a spectrometer that includes an apparatus for coupling at least two different ion streams **simultaneously** to the spectrometer from at least two different ion sources.

Discussion of Claim 16

Claim 16 reads as follows:

16. A method of operating a spectrometer including providing at least two different ion sources, and coupling ion streams simultaneously from the at least two different ion sources to the spectrometer.

In light of the above the Examiner will appreciate that claim 16 recites that the method includes "coupling ion streams simultaneously from the at least two different ion sources to the spectrometer." Applicants respectfully direct the Examiner's attention to the fact that no where in Syage does it teach coupling ion streams simultaneously from the at least two different ion sources to the spectrometer. Accordingly, Syage can not be properly relied upon to anticipate claim 16, and the Applicant request that this objection be withdrawn.

If after considering the above discussion the Examiner maintains the subject objection, the Applicants respectfully request that the Examiner point out with particularity where Syage teaches a method that includes coupling ion streams **simultaneously** from the at least two different ion sources to the spectrometer. In addition, the Applicants respectfully request the Examiner to explain how Fig. 4 teaches this element of claim 16.

Discussion of Claim 30

Claim 30 reads as follows:

30. A method of operating a spectrometer including providing at least two different ion sources, first coupling an ion stream from a first one of said ion sources into the spectrometer, next coupling an ion stream from a second one of said ion sources into the spectrometer, next coupling an ion stream from the second one of said ion sources into the spectrometer, and next coupling an ion stream from the first one of said ion sources into the spectrometer.

As indicated above, claim 30 recites that the method include "first coupling an ion stream from a first one of said ion sources into the spectrometer, next coupling an ion stream from a second one of said ion sources into the spectrometer, next coupling an ion stream from the second one of said ion sources into the spectrometer, and next coupling an ion stream from the first one of said ion sources into the spectrometer." Syage is devoid of any discussion relating to these elements. Accordingly, Syage can not be properly relied upon to anticipate claim 30, and the Applicant request that this objection be withdrawn.

As with the other objected to claims, if after considering the above discussion the Examiner maintains the subject objection, the Applicants respectfully request that the Examiner point out with particularity where Syage teaches a method of operating a spectrometer that includes first coupling an ion stream from a first one of said ion sources into the spectrometer, next coupling an ion stream from a second one of said ion sources into the spectrometer, next coupling an ion stream from the second one of said ion sources into

the spectrometer, and next coupling an ion stream from the first one of said ion sources into the spectrometer. In addition, the Applicants respectfully request the Examiner to explain how Fig. 4 teaches these elements of claim 30.

Objection to Claims 1-37 for Being Obvious Over Syage

As discussed above, Syage does not teach or suggest the invention of claim 1. For example Syage does not teach or suggest simultaneously sampling ions created by a first ionization source and a second ionization source so as to produce a first ion sample and a second ion sample. In addition, Syage is devoid of any discussion regarding simultaneously detecting ions from a first ion sample with a first detector and ions from a second ion sample with a second ion detector. Accordingly, this reference can not be properly relied upon to establish a prima facie case of obviousness and the Applicants request that the subject objection be withdrawn.

With respect to claims 2-15, all of claims 3-15 include claim 2 as a base claim. Therefore each of claims 3-15 include each element recited in claim 2 in addition to other elements. As discussed above Syage does not teach or suggest a claimed spectrometer that includes an apparatus for coupling at least two different ion streams simultaneously to the spectrometer from at least two different ion sources as recited by claim 2. Accordingly, Syage does not establish a prima facie case of obviousness with respect to claim 2 or to claims 3-15 and can not properly be relied upon to support the subject objection. As such, the Applicant respectfully requests that the objection be withdrawn.

With respect to claims 16-29, each of claims 17-29 include claim 16 as a base claim. As discussed above, Syage does not teach or suggest a method of operating a spectrometer that includes providing at least two different ion sources, and coupling ion streams simultaneously from the at least two different ion sources to the spectrometer as recited in claim 16. Therefore, Syage does not establish a prima facie case of obviousness with respect to claim 16 or to claims 17-29 and can not properly be relied upon to support the subject objection. As such, the Applicant respectfully requests that the objection be withdrawn.

Now turning to claims 30-37, each of claims 31-37 include claim 30 as a base claim. Syage does not teach or suggest a method of operating a spectrometer including providing at least two different ion sources, first coupling an ion stream from a first one of the ion sources into the spectrometer, next coupling an ion stream from a second one of the

ion sources into the spectrometer, next coupling an ion stream from the second one of the ion sources into the spectrometer, and next coupling an ion stream from the first one of the ion sources into the spectrometer as recited by claim 30. Therefore, Syage does not establish a prima facie case of obviousness with respect to claim 30 or to claims 31-37 and can not properly be relied upon to support the subject objection. As such, the Applicant respectfully requests that the objection be withdrawn.

If the Examiner maintains the subject rejection after considering the above discussion he is respectfully requested to point out with particularity (i.e. line and column number) where in Syage does it teach or suggest each and every element of each claim 1-37.

CONCLUSION

The foregoing remarks are believed to fully respond to the Examiner's objections. Applicants request that the International Preliminary Examining Authority issue a favorable opinion of claims 1-37.

Respectfully submitted,



Brad Addison
Agent for Applicants

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